

REMARKS/ARGUMENTS

Claims 44-49 and 104-148 are active in this application.

Claims 47-49, 105-109, 111-115, 117, 118, 120-124, 127-130, 132, 133, 137-142 and 145-148 were withdrawn from consideration by the Examiner.

Applicants thank the Examiner for the courtesy of discussing this case along with the related application, 10/069,981, with the Applicants' undersigned representative on November 9, 2005. During this meeting, the differences between the claimed method, e.g., polymer employed, and those polymers used in the cited prior art references were discussed. One point of this discussion related to the fact that unlike the polymer defined in the claims, the polymers described in the cited prior art exhibited a cloud point. It was also emphasized that the demixing temperature of the LCST units contained in the polymer should not be confused with the limitation that the polymer, as a whole, does not exhibit an LCST (or cloud point). To clarify at what temperatures and concentrations the polymer, as a whole, does not exhibit an LCST, i.e., is water-soluble, the claims have been amended to define that the polymer is water-soluble in a range of 5 to 80°C at a concentration of at least 10 g/l. Support for this amendment can be found in the paragraph bridging pages 4-5 of the specification.

No new matter is believed to be added.

Favorable reconsideration is requested.

The rejections of Claims 44-46, 104, 110, 116, 119, 125, 126, 131, 134-136 and 143-144 under 35 U.S.C. § 102(b) over U.S. 4,737,265 ("Merchant"); U.S. 4,839,167 ("Yamamoto"); or U.S. 5,338,352 ("Breneman"); JP61245835 ("Ezaki"); U.S. 4,274,977 ("Koerner"); U.S. 4,559,226 ("Fogel"); EP 1055694 ("Yabuta"), EP 583814 or EP629649 (collectively "The Maroy publications") are respectfully traversed.

Merchant

Merchant does not describe, with any specificity, the polymer employed in the claimed method. In fact, assessment of the polymers Merchant does disclose would lead one to different polymers.

The polymers disclosed in Merchant do not contain an oligomer or copolymer of water-soluble units as claimed (see the maleic anhydride grafted to an alkyl phenol formaldehyde resin in col. 6, lines 41-49), and the polymers disclosed in Merchant do not contain LCST units, which are one of the limitations that defines the claims over this reference—see the p-nonyl phenyl formaldehyde resin having 10 moles of ethylene oxide in the Examples of Merchant (see col. 10, lines 42-45 and col. 11, lines 29-30).

As explained previously, this formaldehyde resin with 10 moles of ethylene oxide contained in the polymers are not LCST units as has been clearly shown in the Malcom and Rowlinson publication, now of record. What becomes clear from this publication is that the Merchant polymers described are those that have no LCST. In maintaining this rejection, the Office states that the teachings of the reference are not as limited as the examples illustrated in the above-discussion. The point is missed. The point here is that the species specifically exemplified by Merchant are exemplary of Merchant's emulsifiers and are simply not the same polymers as defined in the claimed method and that absent such a description, Merchant does not provide the requisite disclosure to select monomers of water-soluble and LCST units and arrange them in the manner that would be the same as the polymer defined in the claimed method. Using the language from MPEP 2131.02, one of ordinary skill in the art would not be able to "at once envisage" the polymers set forth in the claimed method. In view of this, the claims cannot be anticipated by the Merchant disclosure.

Therefore, withdrawal of the rejection in view of Merchant is requested.

Ezaki

Ezaki describes a nonionic surfactant with a specific cloud point. Ezaki does not describe any polymer as required in the present claims, having water-soluble and LCST units such that **the polymer does not exhibit an LCST**, comprises an oligomer or copolymer of water-soluble units, and which is water-soluble within specified temperature and concentrations ranges. As Applicants previous point of distinction was not specifically addressed in the Office Action, Applicants again request reconsideration of this rejection in light of the points above and in view of the amendments submitted herein.

Koerner

The rejection based on Koerner was maintained, at least in part, because “the particular polymer of example 8 has a cloud point at a higher concentration than the concentration recited in the claims.” (Page 4 of the Official Action) However, as explained previously and discussed during the above-noted meeting, the polymers used in the claimed method do not have a cloud point or LCST unlike those in Koerner. It became apparent during the discussion that the interpretation of the LCST of the LCST units and the lack thereof of the polymer, as a whole, had been confused. Therefore, to make this point clearer and as noted above, Applicants have amended the claims to define the solubility of the polymer (or the manner in which the polymer does not exhibit an LCST). In view of this clarification, it should be understood that the polymers described by Koerner having specific cloud points cannot be the same as those used in the claimed method.

Withdrawal of the rejection in view of Koerner is requested.

Yabuta

Applicants' explanation as to the differences between the claims and Yabuta were also not specifically addressed in the Office Action. However, once again, it is believed that the confusion relating to the LCST units and the lack of LCST (or cloud point) in the polymer, as a whole, resulted in this rejection being maintained. As explained above, the claims have been amended to clarify the manner in which the polymers do not have an LCST, i.e., are water soluble within defined temperature and concentration ranges. As the polymers disclosed by Yabuta have cloud points within this range, this means that they are not water-soluble in the manner as required for the polymers used in the claimed methods. Evidence of this flows directly from Yabuta itself whereby they describe block copolymers of ethylene glycol and propylene glycol, which has a cloud point, i.e., the polymer exhibits an LCST, in the 30 to 90°C range (see [0096] and [0097] on page 11).

Withdrawal of the rejection based on Yabuta is requested.

Fogel

As explained previously, the polymers of Fogel have a cloud point, which clearly makes those polymers different from the polymers used in the claimed method.

In maintaining this rejection, the Office states: "applicant appears to be ignoring the polyoxyethylene portions of the water-soluble polymers, i.e., wherein y is from 1 to 20." Applicants did not ignore this disclosure in Fogel and moreover, is not particularly relevant to the claimed invention. These polyoxyethylene portions are the water-soluble portion of the alkoxylate esters. Said another way, the $-(OCH_2CH_2)_y$ is the water-soluble portion and $(R_2)_x$ is the LCST portion of the alkoxylate ester.

Specifically, it has already been explained that alkoylate ester of a specific formula where R₂ can be either (a) or (b) and x is from 1 to 10 (see col. 2, lines 53-62) are those having cloud points within the range that the claimed polymers are to be water-soluble. The technical basis for this distinction is reiterated below.

Polyoxypropylene groups, e.g., when x is 10, have a molecular weight of 580 g/mol and have a demixing temperature, i.e., cloud point, at a 1% concentration of 65°C (see P600E) (Dow Corning Technical Sheet: polypropylene glycol—of record). Furthermore, where x is less than 10, the demixing temperature, i.e., cloud point, is much greater than 65°C (see, e.g., P400E). Therefore, the polymers in Fogel are unquestionably different from the polymer defined in the claims

Withdrawal of the rejection in view of Fogel is requested.

Breneman

Once again, Breneman fails to describe with any specificity polymers meeting the definition of the polymer set forth in the claimed method. The polymers that Brenemann describes are organomodified silicone emulsifiers (col. 2, line 13) in which heating and agitation are required to form an oil-in-water emulsion (col. 3, lines 34-35). Breneman also describes a polyether modified polysiloxane, which is a copolymer of hydrophilic and hydrophobic monomers. The fact that the polymers in Breneman are not the same is missed by the Office—see conclusion set forth on page 4 of the Office Action (i.e., “the water-soluble units and the LCST units are one in the same”). The Brenemann polymers do not contain water-soluble units and the specific types of LCST units in the polymer having all of the features as set forth in the claims—oligomer or copolymer of water-soluble units, and water soluble within defined temperature and concentration ranges.

Moreover, the Office has already recognized these differences in the related co-pending application, US serial no. 10/069,981, by withdrawing the rejection based on Brenemann in view of many of the same elements of the polymer as claimed herein.

Withdrawal of this ground of rejection is requested.

Yamamoto

Yamamoto describes hair care products with an emulsion containing a hair fixative polymer which is water soluble (col. 2, line 10-23 and col. 3, lines 45-46) and can be one of several polymers listed in col. 3, lines 51-63 none of which are the types of polymers claimed. In response to the Office's comment on page 4 of the Official Action, it is stressed that just because Yamamoto may disclose a particular monomer that may have LCST properties (referring to the statement on page 4 of the Action concerning vinylpyrrolidone), there is insufficient disclosure that permits one to envision the types of polymers used in the claimed method. That is, Yamamoto does not describe in any manner, polymers having an oligomer or copolymer of water-soluble units, LCST units with specified properties such that the polymer, as a whole, is water-soluble in the temperature and concentration ranges set forth in the claims.

Moreover, the Office has already recognized these differences in the related co-pending application, US serial no. 10/069,981, by withdrawing the rejection based on Yamamoto in view of many of the same elements of the polymer as claimed herein.

Withdrawal of the rejection based on Yamamoto is requested.

Maroy publications

The LCST side chains described in both Maroy publications are POE, POP, or POEP (see page 2, lines 53-56 and page 3, lines 2-3 of EP '814 and the paragraph bridging cols. 2-3

of EP '649)—these are the same types of units exemplified in the Examples sections of the Maroy publications as well.

In maintaining these rejections, it is stated that “the Examiner fails to find any specific teachings of demixing temperatures above 40°C at 1% by mass in water as suggested by applicant. However, it is reasonable that the LCST units of Maroy et al., would possess the presently claimed properties since the LCST units are identical to applicants.” Applicants disagree and have already provided evidence of the differences previously noted (and reiterated again below).

As discussed previously In Example 1.1-1.4 of Maroy '814, the LCST units are composed of POE5 (polyoxyethylene of a molecular weight of 5000g/mole). As discussed above pertaining to the Merchant rejection and based on the evidence provided from the Malcolm and Rowlinson publication (of record) the phase diagram presented in Figure 6 for polyethylene glycols 5000 have a demixing temperature or LCST (lowest point on the curve generated with squares) of higher than 100°C at a concentration of 1% by mass. This is clearly outside the range defined for the LCST units contained in the polymer used in the claimed method.

In Example 2.3 of Maroy '649, POP LCST units are disclosed (PEP polymer of a molecular weight of 600 g/mole), which as evidenced by the Dow Corning Technical Sheet: polypropylene glycol (of record in this case—refer to the discussion concerning the Fogel rejection) has a demixing temperature of 65°C at a concentration of 1% by mass. This is clearly outside the range defined for the LCST units contained in the polymer used in the claimed method.

Finally, with respect to the POEP LCST units (see the Example on page 7—Example 2.5), such POEP copolymer has a demixing temperature of greater than 60°C at a concentration of 1% by mass. Evidence of this flows directly from Maroy '814 itself and

from extrapolating the information provided for POP and POE copolymers discussed above. In Maroy '814, viscosity of the solutions containing the POEP copolymer increase at a temperature much higher than 60°C (around 100 °C) thereby demonstrating the points at which the polymer demixes in the solution (its LCST properties) as shown in Figures 1 and 2 (see also page 7, lines 47-52 of Maroy '814 for a discussion of those figures.

Having provided evidence that the polymers described by the Maroy publications do not necessarily, each and every time, have the properties of the polymer defined in the claimed method, the rejections based on Maroy '814 and '649 should be withdrawn.

Applicants request that the rejection of Claims 44-46, 104, 110, 116, 119, 125, 126, 131, 134-136, and 143-144 under the doctrine of obviousness type double patenting in view of claims 25-67 of co-pending application no. 10/069,981 be held in abeyance since the alleged conflicting claims have not yet been patented (see MPEP § 822.01).

Application No. 10/069,983
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Applicants also request allowance of this application.

Respectfully submitted,

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